

AVIAN INFLUENZA SURVEILLANCE IN ARIZONA

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Introduction to “Bird Flu”

- Spherical virus in **Orthomyxoviridae** family
- Two types of protein spikes on surface
- Hemagglutinin (“H”)** - - allows virus to attach to the host’s cell
- Neuraminidase (“N”)** - - allows virus to exit the host’s cell
- There are 16 “H” and 9 “N” forms currently recognized
- It is the various combinations of “H” and “N” surface proteins that determine the specific influenza subtype***

A photograph of two ducks swimming in water. The duck in the foreground is a Black Duck with a white patch on its side and a yellow eye. The duck in the background is also a Black Duck. The water is brownish and has ripples.

Introduction to “Bird Flu”

- **Highly Pathogenic Avian Influenza (HPAI)**
 - Systemic
 - High mortality
- **Low Pathogenic Avian Influenza**
 - Localized (GI & Resp)
 - Low mortality
- **H5N1 HPAI, Asian Strain**
 - Many subtypes of AI in N.A. wild birds
but not Asian H5N1 HPAI



Countries w/ H5N1 Detected

1996: First isolation in domestic geese in southern China.

2003/2004: Cambodia, Hong Kong, Indonesia, Japan, Korea, Laos, Malaysia, Pakistan, Thailand, Vietnam.

2005: Croatia, Kazakhstan, Mongolia, Romania, Russia, Turkey, Ukraine.

2006: Afghanistan, Bosnia, Bulgaria, Cameroon, Denmark, France, Egypt, Germany, Greece, Hungary, India, Iraq, Iran, Israel, Italy, Jordan, Myanmar, Nigeria, Poland, Slovakia, Sweden (wild ducks), Switzerland (wild ducks), United Kingdom (wild whooper swan).

2007: Bangladesh, Kuwait (poultry and captive falcon), Saudi Arabia, United Kingdom (turkeys).

Human Cases: Close to 300 and ~50% fatality rate.

Government Response

Necessitated by H5N1's potential impacts on US agriculture, wildlife, and human health.

US Interagency Strategic Plan

- Unified national system for early detection of highly pathogenic H5N1 AI in wild birds.
 - Provides standard procedures and strategies for sampling, diagnostics and data management.
 - Multi-agency partnership.
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- Flyway and State plans developed from the US Strategic Plan

